

# LA-UR-22-20018

Approved for public release; distribution is unlimited.

**Title:** RCT Continuing Training 1st Quarter 2022 Exercise Guide

**Author(s):** Gillilan, Justin Parker

**Intended for:** RCT Continuing Training

**Issued:** 2022-01-03



Los Alamos National Laboratory, an affirmative action/equal opportunity employer, is operated by Triad National Security, LLC for the National Nuclear Security Administration of U.S. Department of Energy under contract 89233218CNA000001. By approving this article, the publisher recognizes that the U.S. Government retains nonexclusive, royalty-free license to publish or reproduce the published form of this contribution, or to allow others to do so, for U.S. Government purposes. Los Alamos National Laboratory requests that the publisher identify this article as work performed under the auspices of the U.S. Department of Energy. Los Alamos National Laboratory strongly supports academic freedom and a researcher's right to publish; as an institution, however, the Laboratory does not endorse the viewpoint of a publication or guarantee its technical correctness.



## RCT 1<sup>st</sup> Quarter 2022 Training Exercise Guide

### UTrain #53850

<b>Name:</b>	<b>Z#:</b>
<b>Signature:</b> Type your full name in this block to indicate your signature on the date of this form.	<b>Date:</b>

**Instructions:** After viewing the pre-recorded lecture, complete the following exercise. Scan or email your responses to RP-training@lanl.gov for review. An email confirmation will be sent from the RP training staff stating your training records have been updated. This form is fillable and answers may be typed or hand-written. An optional feedback form has been attached for your convenience.

---

Question 1: Define the following terms:

**Annual Limit on Intake (ALI) –**

**Derived Air Concentration (DAC) –**

**Derived Air Concentration – hour (DAC-hr) –**

---

Question 2: List 5 types of air samplers

---

Question 3: List 6 factors that should be considered for air sampler placement.

---

Question 4: What is the required flow-rate of a low volume air sampler per RP-PROG-TP-200 and what are the actions if this flow-rate cannot be achieved?

---

Question 5: What must be recorded when starting and securing an air sample for HPAL to obtain an accurate volume?

---

Question 6: State the actions if an air sample field screen exceeds 4,000 dpm (combined alpha and beta) and the reasoning for these actions.

---

Question 7: Determine the Sum of DAC from the information seen below.

Sample ID	Alpha Activity (dpm/m3)	2* sigma (dpm/m3)	Alpha MDA (dpm/m3)	Beta Activity (dpm/m3)	2* sigma (dpm/m3)	Beta MDA (dpm/m3)	Run Time (h)	Flow Rate (cfm)
1	7.50	7.504	6.7	208.5	13.586	11.71	0.25	2.0

DAC for Unknown Radioisotopes

Beta emission    4 E-11 DAC  $\mu$ Ci/mL

Alpha emission   2 E-13 DAC  $\mu$ Ci/mL

---

Question 8: List 4 sample types and 4 sample analyses HPAL can perform.

**Analysis**

**Sample Type**

---

Question 9: Where should the HPAL matching barcodes be placed?

---

Question 10: What are the HPAL notification limits?

Type	Limit
Alpha Contamination	
Beta Contamination	
$\beta/\gamma$ Radiation	
Tritium Contamination	

---

Question 11: Where can you find a list of acceptable hazardous material that HPAL will accept?

---

Question 12: What must be place on the outside of all sample shipping containers and on the inside of containers shipping liquid samples?

---

Question 13: After the samples have been analyzed by HPAL, what must the RCT do in the HPAL tracking system?

## Level 1 Evaluation Form

Instructor Name: \_\_\_\_\_

Course Date: \_\_\_\_\_

Course Title: \_\_\_\_\_

Course No.: \_\_\_\_\_

**Instructor:** *Were the instructor's methods effective? Was the instructor prepared?***Course Materials:** *Were course materials/handouts helpful during class? Please explain.***Classroom Engagement:** *Were classroom activities/discussions engaging? Please explain.***Course Effectiveness:** *What instructional methods/training aids could have benefited the students better? Please explain.***Application:** *Was this training meaningful and applicable to your current job? (i.e., will you be able to apply this training in your current position?) Please explain.***Areas for Improvement:** *Please list any ideas or suggestions to help improve the training program.***Knowledge Level:** *Before this class, my knowledge on this subject was (check one):*☐ Non-Existent    ☐ Novice    ☐ Intermediate    ☐ Advanced    ☐ Expert**Knowledge Level:** *After this class, my knowledge on this subject is (check one):*☐ Non-Existent    ☐ Novice    ☐ Intermediate    ☐ Advanced    ☐ Expert

Name: (optional) \_\_\_\_\_

Z# \_\_\_\_\_

Date: \_\_\_\_\_